

COMPARISON OF PPH HEMORRHOIDECTOMY VS MILLIGAN MORGAN HEMORRHOIDECTOMY

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ABSTRACT

Objectives: To compare the Milligan Morgan Hemorrhoidectomy (MMH) with Procedure for Prolapse Hemorrhoids (PPH) in terms of per-operative and post-operative outcomes.

Material and Methods: This Prospective randomized clinical trial was conducted at Surgical Department of Khyber Teaching Hospital, Peshawar, from January 2011 to April 2014 on 105 patients who presented with prolapsed hemorrhoids. The patients were randomly allocated into Group A (MMH) and Group B (PPH) using lottery method. Various per operative and post-operative variables were studied and compared.

Results: There were 60 patients in Group A and 45 in group B. The operative time was significantly lower in Group B (25 vs 35 minutes), mean length of hospital stay was also shorter (2 vs 4 days). However, average cost per procedure for Group B is significantly higher (23500 PKR vs 7000 PKR). Patients in Group B experienced lesser post-op pain (VAS=4.5vs2.0) and recurrence (11.6% vs 6.6%) as compared to Group A.

Conclusion: Procedure for Prolapse Hemorrhoids (PPH) requires operator training and is less recognized in Pakistan but due to its excellent postoperative results, patient satisfaction and being a day care procedure, it should be adopted as primary treatment in prolapsed hemorrhoids.

Key Words: Prolapse, Hemorrhoids, Milligan Morgan, Stapled, Hemorrhoidectomy.

INTRODUCTION

Hemorrhoidal disease is the commonest proctologic disease affecting humans. Factors that increase intra-abdominal pressure (e.g., prolonged straining, constipation, pregnancy and ascites) contribute to dilatation, engorgement and prolapse of hemorrhoidal vascular tissue.¹ The exact global prevalence of symptomatic hemorrhoids is very difficult to establish, because many sufferers do not seek care for their problems or rely on over-the-counter remedies. According to Khanzada MS hemorrhoidal disease is the 3rd most commonly (8%) presenting problem to General Surgeons in the UK following hernia (30.1%) and cholecystitis (15%)².

Various treatments for hemorrhoidal disease include conservative management, nonsurgical treatments, and surgical treatments. Dietary and behavioral modifications are the first-line recommendations made

to patients. These include high fiber and fluid intakes, weight reduction, warm sits baths, reducing time spent at straining and several others. Rubber band ligation and injection sclerotherapy are accepted outpatient procedures for first and second degree hemorrhoids. Newer advanced methods include infrared coagulation, bipolar diathermy, direct current electrotherapy, heater probe coagulation³.

Surgical treatments fall into several categories and are applied in 3rd and 4th degree disease. The first is the classic excisional hemorrhoidectomy. With some technical variants; it is the most widely practiced surgical therapy worldwide. This technique is highly effective with low recurrence, but it is offset by significant pain and prolonged recovery. Complications include urinary retention (2-36%), bleeding (3-6%), infection (5-5.5%), anal stenosis (0-6%), and incontinence (2-12%)^{4,5}. The closed, or Ferguson hemorrhoidectomy, is commonly performed in the United States while in the United Kingdom, MMH is in practice. Further advances in this field resulted in the Transanal Hemorrhoidal De-arterialization or Hemorrhoidal Artery Ligation system (HALS). This is a newer technique that uses Doppler identification of the distal rectal arterial branches and suture ligation of the vessels to decrease flow to the hemorrhoidal cushions.⁶

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The procedure for prolapse and hemorrhoids, also called Stapled Hemorrhoidopexy was first proposed by Pescatori et al and refined by Antonio Longo in 1998, using a specially designed circular stapling device called PPH gun to divide, resect, and repair the mucosa and submucosa. This causes an interruption of arterial inflow to the hemorrhoids, which "fixes" the previously prolapsing mucosa to the underlying rectal wall^{7,8,9}. Compared with excisional hemorrhoidectomy, it is favorable in terms of postoperative pain, return to work, and complications of pruritus and fecal urgency¹.

Since its advent many authors have written about PPH and it has been subjected to various RCTs¹⁰⁻¹². Most trials have demonstrated beneficial results for PPH and a rapid worldwide acceptance trend has been noticed. The aim of this study is to compare the outcome of Milligan-Morgan (MMH) and Procedure for Prolapse and Hemorrhoids (PPH) in terms of operating time, length of hospital stay, postoperative pain (at 1st post op day and at first bowel movement), reactionary and secondary postoperative bleeding, recurrence of symptoms and cost of procedure. Since very little work has been done on this subject at a local level we aim to ascertain the superiority of one procedure over the other.

MATERIAL AND METHODS

This Prospective randomized clinical trial was conducted at Surgical Department of Khyber Teaching Hospital, Peshawar, Pakistan from January 2011 to April 2014 on 105 patients. Patients who presented with symptoms of painless bleeding per rectum were evaluated by taking history, general examination; digital rectal and proctoscopic examination to confirm the diagnosis. Those patients who presented with 1st and 2nd degree hemorrhoids or patients with concomitant anal fissure, complicated, secondary, recurrent hemorrhoidal disease, bleeding rectal varices, thrombosed or external hemorrhoids were excluded from the study.

The patients were randomly allocated into Group A and Group B. Randomization was performed using lottery method. The patients in Group A underwent MMH while those in Group B underwent PPH using the 33mm PPH 01 kit (Ethicon Endo-Surgery). Both procedures were done under general or spinal anesthesia. Each operating surgeon had a previous experience in treating at least 30 patients using the PPH gun. All information was recorded on pre-designed proforma. Patients were explained about the two procedures and then informed consent was taken about inclusion in the trial. The protocol was approved by the hospital ethics committee

After induction of anesthesia, the procedures were performed keeping the patient in lithotomy position. In

60 patients, Milligan Morgan's technique (open) was used. The skin incision was made on the mucocutaneous border and hemorrhoids were excised to the ano-rectal junction with diathermy. The base of pedicle was transected with 2/0 polyglactin. The resulting wounds were left open and anal canal was plugged.

In 45 patients, an anoscope was fixed to the perianal skin, using a side viewing proctoscope a Purse string suture was taken 3-4 cm proximal the dentate line using Polypropylene 2/0 curved needle in the mucosa and submucosa of the rectum. The PPH gun was then introduced, fully opened, into the anal canal, and the suture tightened between the anvil and shaft of the instrument. This drew the distal redundant mucosa proximally into the jaws of the stapler. After tightening the stapler, a finger was placed trans vaginally in female to assure that the recto-vaginal septum was not included within the stapler. The stapler was then fired and removed. Following this, the staple line was inspected for gaps and particularly for bleeding points, which were then cauterized or over sewn.

All patients were assessed for duration of operation in minutes, length of hospital stay in days; the cost of Surgery in Pakistani Rupees was calculated. The postoperative parameters that were studied included postoperative pain after 24 hours of surgery, at the time of first bowel movement and postoperative bleeding. The Visual Analogue Scale (VAS) was used, where 0 stands for "no pain" and 10 being "worst pain ever experienced". All Patients were followed for a period of 3 months to detect any recurrence of symptoms such as bleeding, prolapse or pain. Patients were discharged once their pain was adequately controlled with oral analgesics, pack had been removed and at least one defecation episode had been achieved.

Data was entered and analyzed using statistical program SPSS version 17.0. Qualitative data (frequencies and percentages) such as gender, degree of hemorrhoids, bleeding and recurrence were presented as n(%) and chi square test was applied to compare the proportion between groups A and B. Numerical variables like age, operating time, duration of hospitalization, post operative pain score (duration first 24 hours, at first bowel movements) were presented as Mean \pm SD. All the data was calculated on 95% confidence interval. A p value < 0.05 was considered as statistically significant level for all comparisons.

RESULTS

A total of 105 patients were included in study with 60 patients in Group A (MMH) and 45 in group B (PPH). The characteristics of patients are given in Table 1. It was noticed that the operative time was significantly lower in

Table 1: Preoperative Characteristics

Variables		Group A (MMH) n=60	Group B (PPH) n=45
Age (years)		41.50 +3.6	43.30+5.0
Gender	Male	66%	64%
	Female	33%	36%
Degree of hemorrhoids	Third	83.3%	80%
	Fourth	16.6%	20%

Table 2: Operating time, Cost and Duration of hospitalization

	Group A (MMH) n=60	Group B (PPH) n=45	P-value
Operating time (minutes)	35 (20-50)	25 (15-35)	0.004
Cost of Surgery (Rs/\$)	7000 (6-8000) Rs (US \$=60-80)	23500 (22-25000 Rs) (US \$ 220-250)	0.002
Length of Hospital Stay (days)	4 (2-6)	2 (1-3)	0.008

Group B than in Group A (25 vs 35 minutes). Similarly the mean length of hospital stay was only 2 days for Group B while it was 4 days for Group A. However, it is worth noticing that the average cost per procedure for Group B is significantly higher (23500 Rupees vs 7000 Rupees) which is the major disadvantage of stapled Hemorrhoidopexy. (Table 2). The post-operative complications were compared in both the techniques. Patients were evaluated for severity of pain when the effect of anesthesia was over.

DISCUSSION

In our study the average length of hospital stay is significantly lower for PPH than for MMH i.e 2 vs 4 days; which is comparable to international studies.^{11,12} Ellaban states that there is a significantly shorter mean duration of the hospital stay in the stapled group than in the traditional group (1.09 vs 2.8 days)¹³. The mean hospital stay was also shorter (2.2 vs 3.1 days) in a study by Gravie JF et al.¹⁴ However there were no differences in hospitalization and intraoperative length in the study by Manfredelli et al.¹¹

The mean operative time was significantly shorter for PPH group (25 vs 35 mins). PPH was significantly quicker to perform than MMH (21 vs 31 mins; P =0.001), according to the French study but the Egyptian study

did not show such a significant difference in operating time (35mins vs 38mins)^{12,13}.

None of the previous studies has included cost of procedure in their work but according to our study there is only one obvious drawback of PPH study with respect to cost of this procedure which is almost three times more than conventional surgery. This is one reason why this procedure has not been so widely and readily adopted in a developing country like Pakistan where low socio economic status and lack of health insurance are a hurdle in provision of health care.

The main postoperative complication under consideration in our study was postoperative pain according to VAS after 24 hours of the procedure. The difference was statistically significant. Similarly the pain score at the time of first defecation was quite high for open surgery. MMH is a painful procedure for the patient once the effect of anesthesia has worn off, also there is significant discomfort during pack removal and first bowel movement which usually comes late due to fear of pain and anal spasm and these patient tend to mobilize later. Some also end up with a vicious cycle of constipation and anal fissure. On the other hand patients undergoing PPH are pain free, enjoying early mobility and return to normal bowel habits with minimum discomfort. As a result the use of analgesic, length of hospital stay and follow up visits is reduced while there is an expected earlier return to work which in turn helps to reduce the cost of PPH.

Most of the previous studies have given preference to measuring late postoperative complications such as anal stenosis, incontinence, urine retention and tenesmus etc. Very few studies have given data regarding postoperative bleeding. In our study we divided it into reactionary and secondary hemorrhage. We found that PPH is associated with lower incidence of postop bleeding such that only 2 patients suffered reactionary hemorrhage and only one suffered secondary hemorrhage. In contrast to the higher rates of prolapse and bleeding recurrence for PPH reported by Gravie et al¹⁴ and some other studies^{15,16}. Our study shows that PPH is related to a lower recurrence (6.6% vs 11.6%) and greater satisfaction after a follow up of 3 months.

CONCLUSION

Milligan Morgan Hemorrhoidectomy is a day case procedure, although expensive but gives an excellent results.

Recommendations

It is recommended that at least 2 years follow up is carried out in future studies to provide more convincing evidence.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Zarin M:	Concept and operating surgeon.
Khan MA:	Data collection and manuscript writing.
Kamran H:	Statistics.
Akhunzada TS:	Operating surgeon.
Ahmad B:	Follow up.
Khalil W:	Follow up.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST: Authors declare no conflict of interest

GRANT SUPPORT AND FINANCIAL DISCLOSURE NIL